

Supplementary Equipment

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**AD/SUPP/1  
Amdt 3**

**Breeze Hoists**

**6/87**

Applicability: Breeze model BL16600 hoists.

*Note: These hoists are used with supplementary equipment kits for Bell, Agusta Bell and Hughes helicopters, and may be used by other manufacturers.*

Requirement: 1. Inspection Test and Modification (All Breeze Model BL16600 Hoists fitted with a single down limit switch.)

- a) Extend hoist cable fully to check operation of down limit switch.
- b) Inspect adjustment of down limit switch collar to ensure that end float between collar and spring sleeve is kept to a minimum consistent with completely free operation of the switch roller arm. (.25mm to .38mm is considered satisfactory clearance). Check for satisfactory engagement of the spring in the arm and the collar. Check the collar lock screw for security.
- c) With the cable extended until the down limit switch operates ensure that a minimum of three full turns of cable remains on the drum.
- d) With the cable extended, mark the 3 metres of cable nearest the drum with a clearly visible colour, e.g. Orange or Red.
- e) Add approved amendment to hoist operating procedures section of flight manual - "Caution, do not rely on cable down limit switch. Cease cable extension when painted cable visible from hoist".

2. Inspection and Test

Caution

Exercise extreme care to prevent hands or clothing from becoming entrapped in the mechanism when operating the hoist assembly during the following operations.

SCHEDULE OF AIRWORTHINESS DIRECTIVES

- a) Preflight inspection.
  - (i) Check date on hoist to ensure that periodic inspection is not due.
  - (ii) Visually inspect hoist components for secure mounting. Check all visible wiring and electrical leads for condition and security.
  - (iii) Check cable cutter electrical leads for secure connections.
  - (iv) Check hoist operation, paying out and reeling in approximately 1 metre of cable.
  - (v) Check operation of full-in limit switch(es).
  - (vi) Check the hook for secure attachment to the cable and operation of the safety catch.
  
- b) Post Flight Inspection. Two persons are required for this check; one to operate the hoist controls, the other to provide a light tension on the hook and cable assembly to prevent it from contacting the ground during the inspection.
  - (i) With one person depressing the down button on the pendant assembly and the other walking away from the aircraft, pay out the cable until the full-out limit switch(es) automatically stop hoist operation. A minimum of three (3) inactive wraps of cable must remain on drum.
  - (ii) Visually inspect exposed portions of drum and drum flanges for cracks, wear, abrasion and other defects.
  - (iii) Using a clean lint free cloth between the hand and cable maintain a 5-10kg pull on the cable while depressing the up button on the pendant assembly. Manually activate the up limit switch(es) while reeling in to verify operation. During cable reel-in inspect cable for kinks, bends, frayed wires, breakage or any other defect that may weaken the cable. If the cable snags the hand held cloth at any time, stop hoist operation and carefully inspect cable at area of snag for hidden damage. Check level wind for proper operation. Reel cable completely in until full-in limit switch(es) automatically stop hoist operation.
  - (iv) Inspect all visible electrical connections and accessible components for secure mounting, damage and cleanliness.
  - (v) If hoist has been operated near salt water, cable and hoist should be flushed with fresh water.

Caution

- (i) Do not exceed 10 degrees cable fleet angle during hoist operation.
- (ii) Do not allow cable or hook to contact the ground during inspection.

- c) Periodic Inspection. Carry out the following periodic inspection together with the Post Flight Inspection.
- (i) Loosen the four (4) outside nuts that secure the hoist top cover and remove the cover.
  - (ii) Inspect visible hoist components, electrical connections and wiring for serviceability.

*Note: Pay particular attention to any shielded electrical cables associated with the hoist installation, especially at the plug/socket combination which forms the hoist electrical disconnect. The shielding braid must pass electrically unbroken through the disconnect combination for adequate protection against accidental cable cuts.*

- (iii) Inspect the roller spring(s) to ensure engagement in the switch support(s) and the cam roller bracket. Inspect spring(s) for corrosion or damage. Rotate cam roller bracket up and away from the cable drum for approximately 12 mm and release to check spring operation.
- (iv) Reel the hook and cable out by operation of the down switch. Manually activate each microswitch lever, one at a time, to assure proper functioning of each full out limit switch during reel out. With each microswitch operation the hoist must stop.
- (v) Replace hoist top cover and tighten the four (4) nuts securing the cover to the hoist.

*Note: Excessive tightening of the nuts securing the front of the top cover may change the adjustment of the full out limit switch(es).*

- (vi) Reel out the entire cable by following the post flight inspection instructions, until hoist shut-off occurs indicating limit switch operation. A minimum of three (3) inactive wraps of cable must remain on drum. Inspect condition of the paint marking the last 3 metres of cable. Re-paint as required.
- (vii) Begin reeling in the cable by operation of the up switch. During the initial reeling in operation, depress each full-in limit switch by rocking the hook bumper ring up, contacting one switch at a time to assure proper functioning of each switch. With each limit switch operation the hoist must stop.
- (viii) Continue reeling in cable by following the Post Flight Inspection Instructions until normal shut off occurs when the hook bumper contacts the switch(es).

*Note: If any switch malfunctions, or a spring is defective, replace the defective part(s).*

- (ix) Prominently mark on the hoist the date by which the next six monthly inspection is due.

**SCHEDULE OF AIRWORTHINESS DIRECTIVES**

- Compliance: For Para 1: Before further operation of the hoist after 5 May 1980.
- For Para 2(a): Prior to first flight of day.
- For Para 2(b): After last flight of day in which the hoist was used.
- For Para 2(c): Inspect and test prior to 31 January 1985 and thereafter at intervals not exceeding 6 months.
- Background:
1. This Directive has been amended to reflect the requirements of AD/SUPP/7.
  2. Hoist component failures have led to personnel injury.
  3. Emphasis has been made of the requirement for adequate circuit shielding integrity.